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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 09/891,332 | 06/27/2001 | Joseph Solus | 0942.4250003 (IVGN 107.3 | 4572 |
| 65482 7590 01/05/2007 INVITROGEN CORPORATION C/O INTELLEVATE P.O. BOX 52050 MINNEAPOLIS, MN 55402 | | | EXAMINER TUNG, JOYCE | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1637 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 01/05/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 09/891,332 | Applicant(s) SOLUS ET AL. | |
| | Examiner Joyce Tung | Art Unit 1637 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-11,13-15,17-28,31-33,66 and 69-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-11,13-15,17-20,23-28,31-33,66,69-82 is/are rejected.
- 7) ☒ Claim(s) 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The applicant's response filed 10/25/06 to the Office action has been entered. Claims 1-2, 5-11, 13-15, 17-28, 31-33, 66, 69-82 are pending.

1. The rejection of claims 21 and 22 under 35 U.S.C. 103(a) as being unpatentable over Hughes et al. (5939301, issued August 17, 1999) as applied to claims 1-2, 5-11, 13-15, 17-20, 23-28, 31-33, and 66-82 above, and further in view of Huo (5,922,535, issued July 13, 1999) is withdrawn because of the statement of the Declaration filed 10/15/06.
2. Claims 1-2, 5-11, 13-15, 17-20, 23-28, 31-33, 66 and 69-82 remain rejected under 35 U.S.C. 102(e) as being anticipated by Hughes et al. (5939301, issued August 17, 1999).

Hughes et al. disclose a method of DNA sequencing with thermostable mutant polymerases (See the Abstract, column 20, lines 24-47). The mutant polymerase can be used in molecular biology (See column 3, lines 18-20) such as sequencing and amplification (See column 1, 39-41). The mutant polymerase is the mutant of *Thermotoga neapolitana* (Tne) polymerase (See the abstract). The mutant polymerase has reduced 3' to 5' exonuclease activity, 5'-3' exonuclease activity and mutation in the O-helix of the polymerase (See the abstract, column 1, lines 29-41, column 7, lines 6-15, column 8, lines 41-67). The DNA polymerase mutant has substituted a Tyr for Phe at amino acid position 67 and other changes within the O-helix (See column 9, lines 6-13). Hughes et al. also disclose a kit containing the mutant polymerase Tne (See column 12, lines 5-34).

Hughes et al. do not explicitly disclose that the mutant polymerase reduces the ability to add one or more non-templated nucleotides to the 3' terminus of a synthesized DNA molecule and produces a population of amplified DNA fragments, wherein less than about 50% of the

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amplified DNA fragments have one or more non-templated 3' nucleotide compared to amplification products produced by *Taq* DNA polymerase assayed under the same condition as recited in claims 1, 2, 23 and 66. However, these limitations set forth above are the results of the method or the function of the mutant polymerase. Since the mutant polymerase of Hughes et al. has the same mutated position as the mutated polymerase recited in the instant claims, it is inherent that both mutated polymerases are having the same function. In addition as both mutated polymerases are applied in the same amplification conditions, it would have the same results as recited in the claims.

Moreover, the limitations discussed above are recited as function limitations and results of the method. These limitations do not have patentable weight.

Claims 69-82 further recite the limitations regarding the results of the method or the function of the mutated polymerase. As discussed above, these limitations do not have patentable weight. Thus, the teachings of Hughes anticipate the limitations of the claims.

The response argues that the applicants have filed concurrently herewith a Declaration under 37 CFR 1.131 antedating the filing date of the Hughes references. However, the Declaration only states that U.S. SN: 09/891,332 and U.S. Patent 5,939,301 were commonly owned by Life Technologies, Inc. ("LTT") at the time the invention of U.S. SN: 09/891,332 was made. There is no statement regarding antedating the filing date of the Hughes references. Thus, the rejection is maintained.

Allowable Subject Matter

3. Claims 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

Concerning claims 21-22, no prior art has been found teaching or suggesting the method of claim 1 used in determining the relationship between a first individual and a second individual in which the individuals are analyzed according to the method of claim 1.

Summary

5. No claims are allowed.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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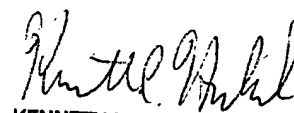
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joyce Tung whose telephone number is (571) 272-0790. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joyce Tung

December 22, 2006


KENNETH R. HORLICK, PH.D.
PRIMARY EXAMINER

12/26/06